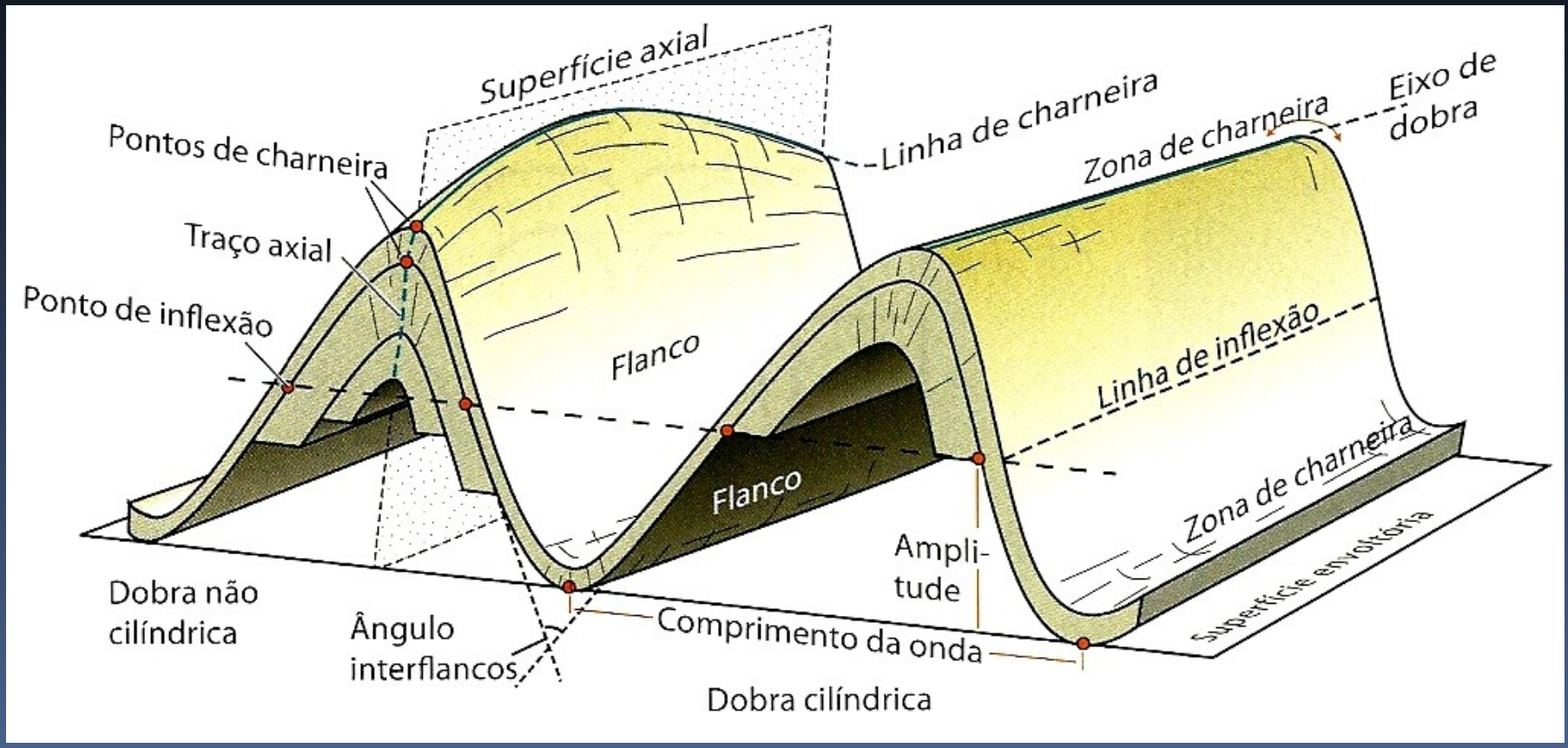
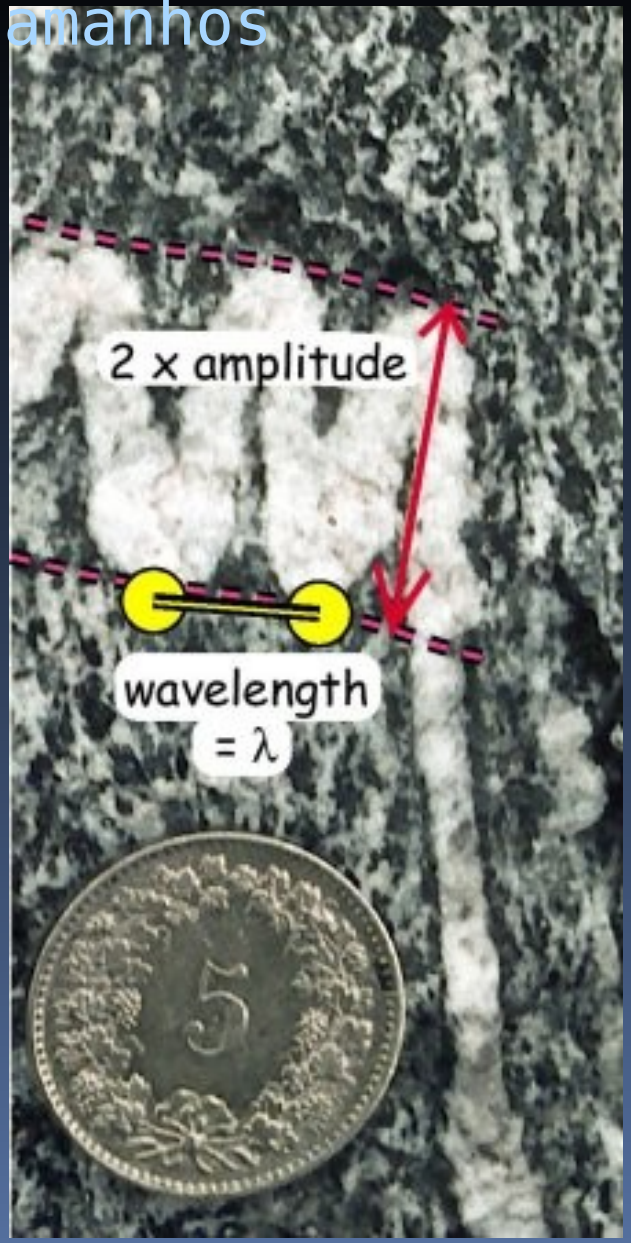
Ambiente compressivo - Dobras (*folds*)



Deformação dúctil, porém com desenvolvimento de fraturas

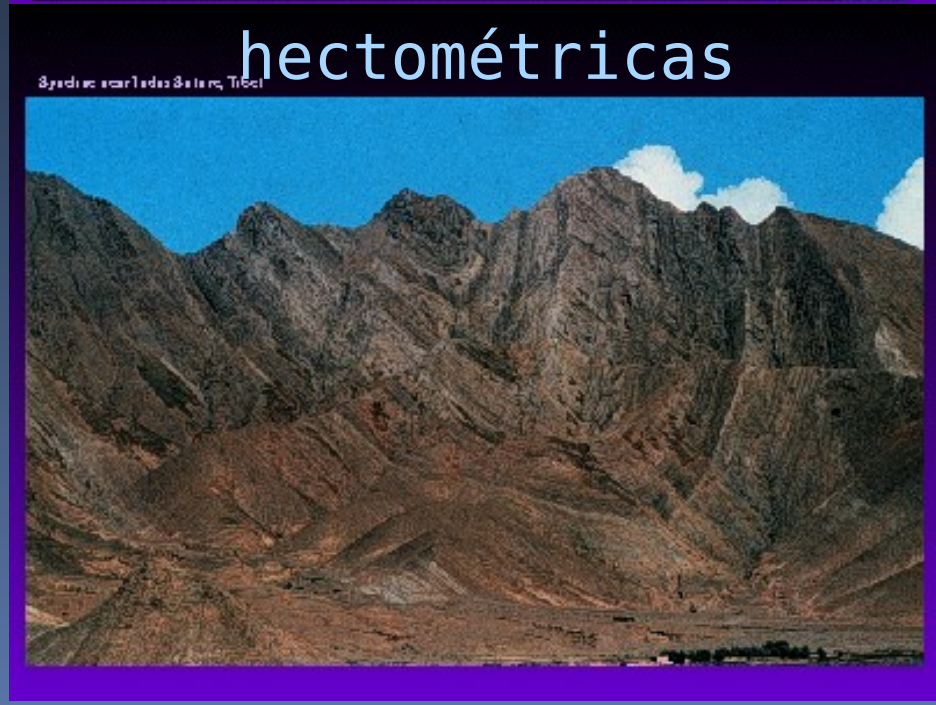
Dobras de diversos tamanhos

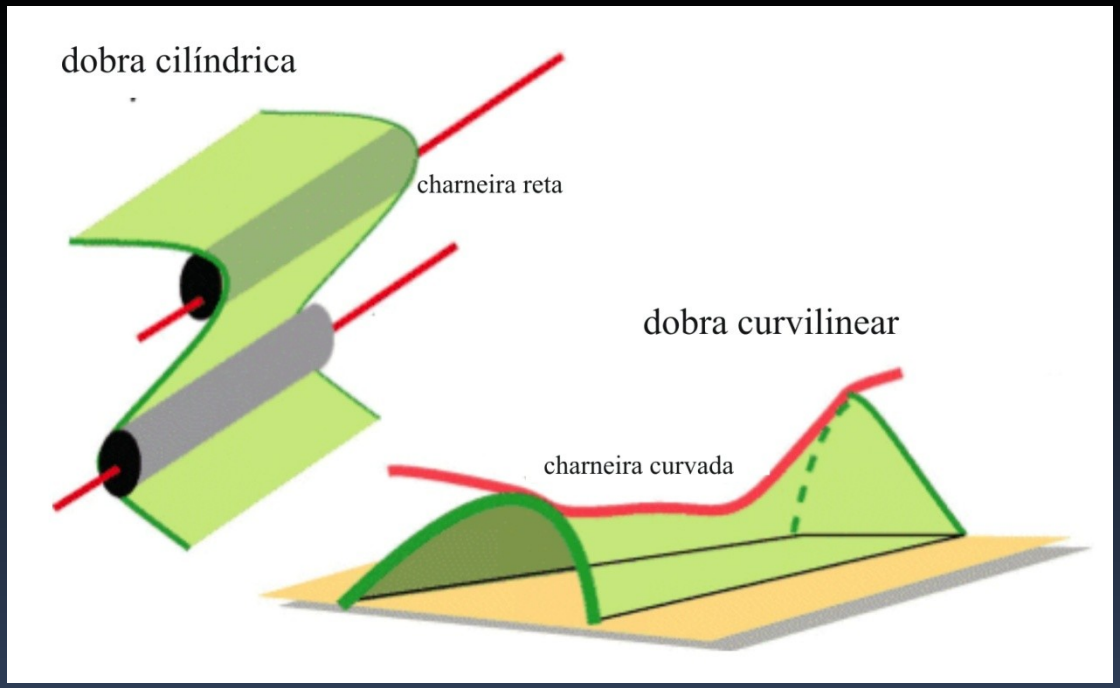


centimétricas

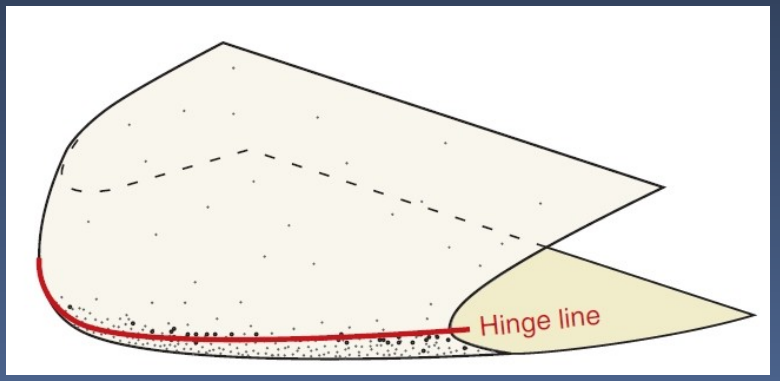
métricas

hectométricas

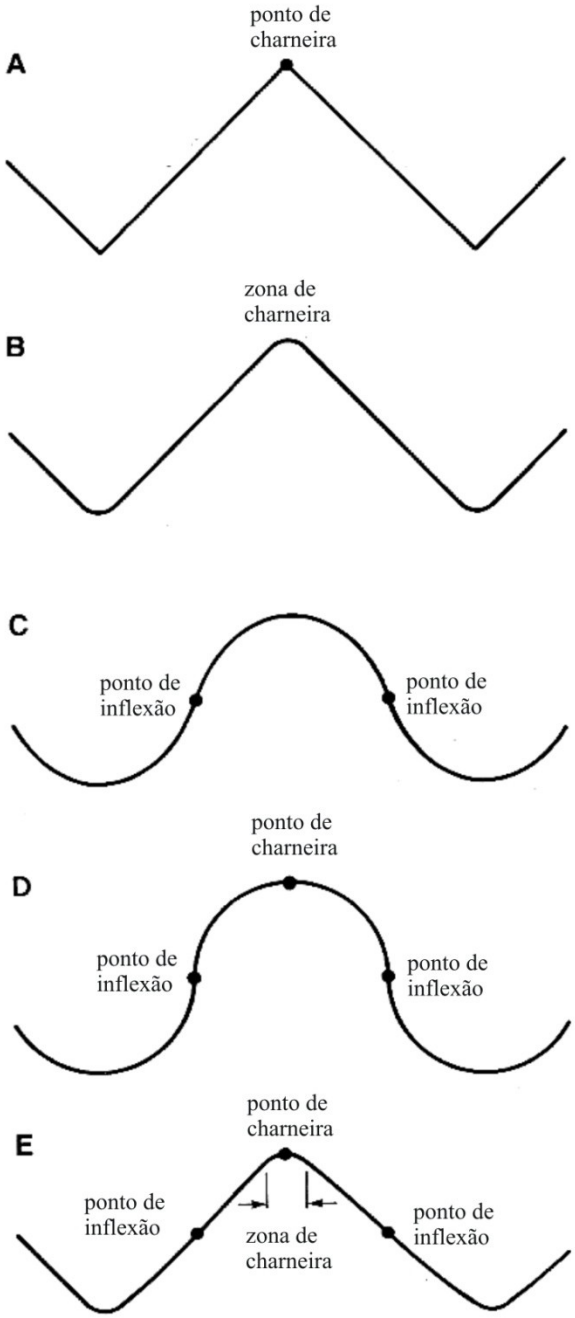


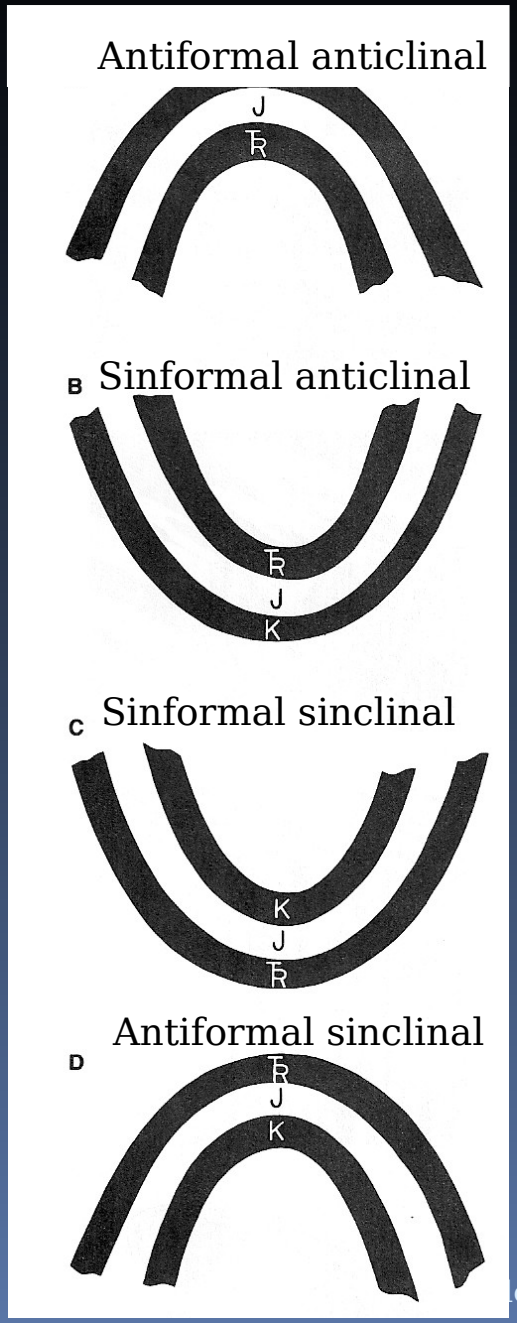


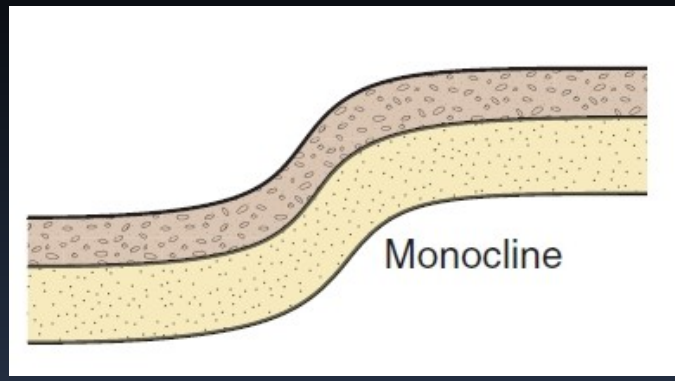
Cilídricas: charneira é reta e paralela ao eixo, que repetido desenhará a superfície da dobra



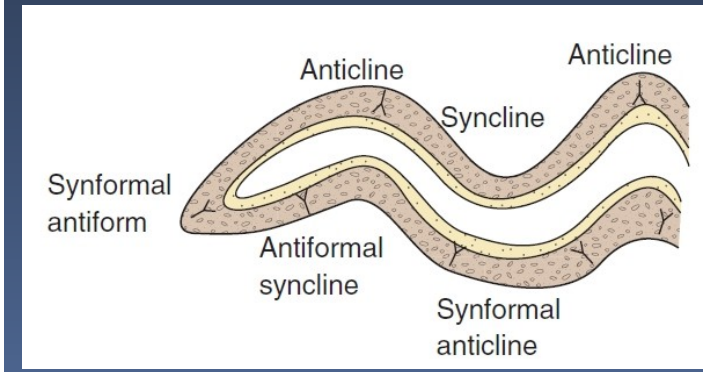
dobra cônica



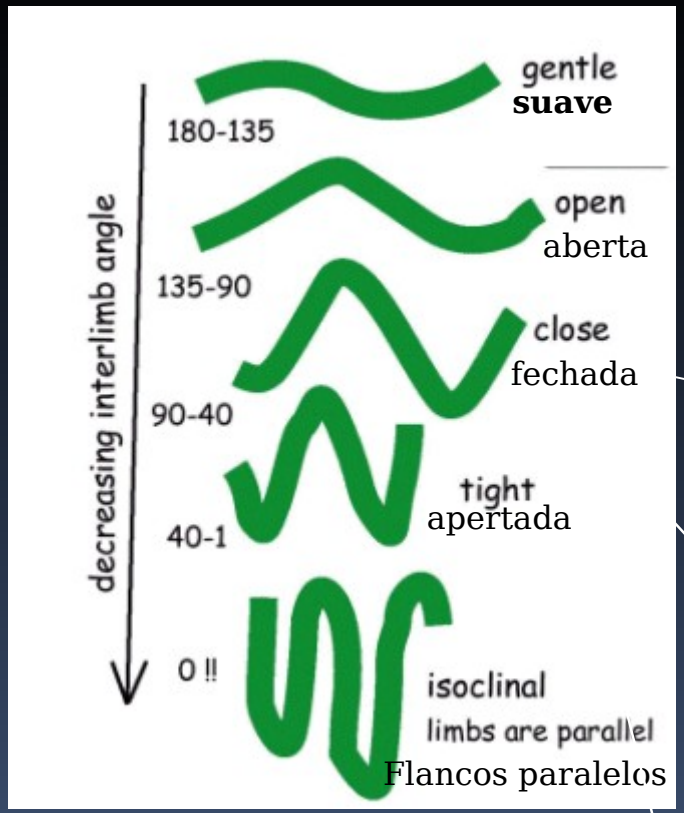


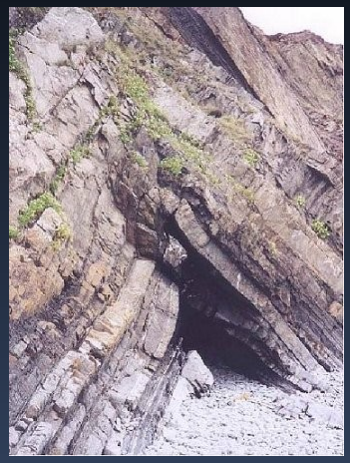


Monoclinais – só têm um flanco

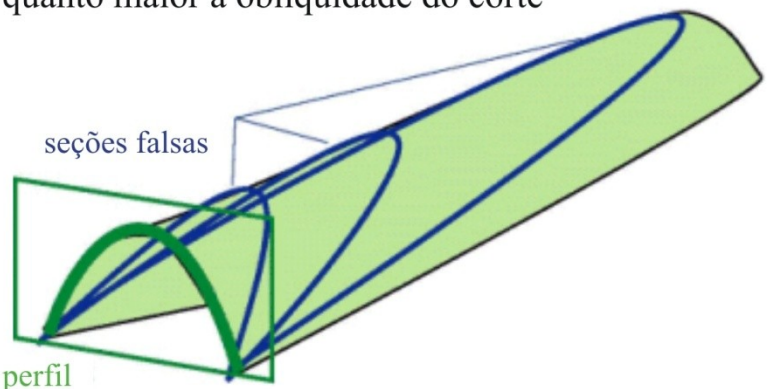


Classificação pelo ângulo entre os flancos





quanto maior a obliquidade do corte



mais apertada parecerá a dobra

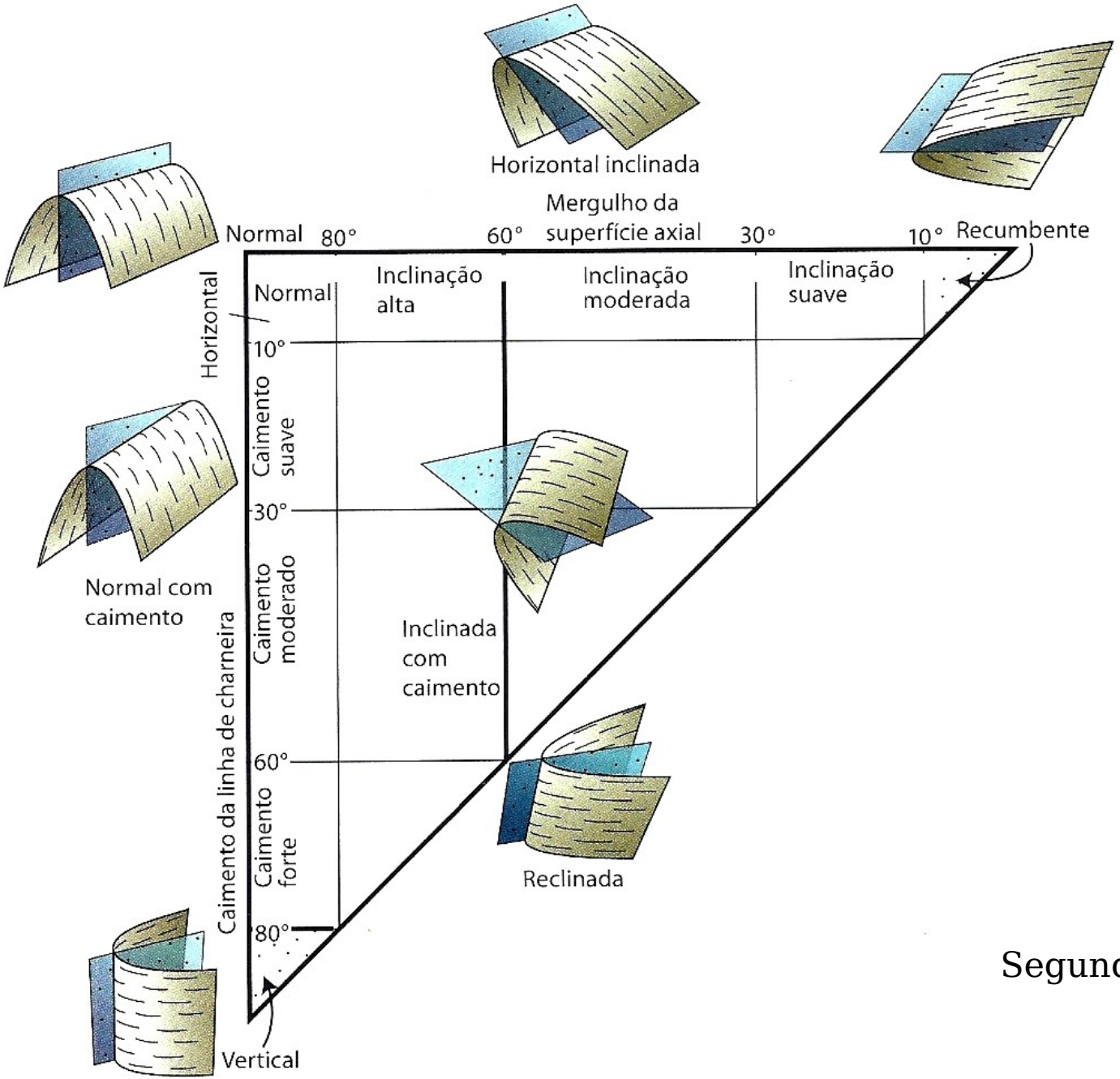
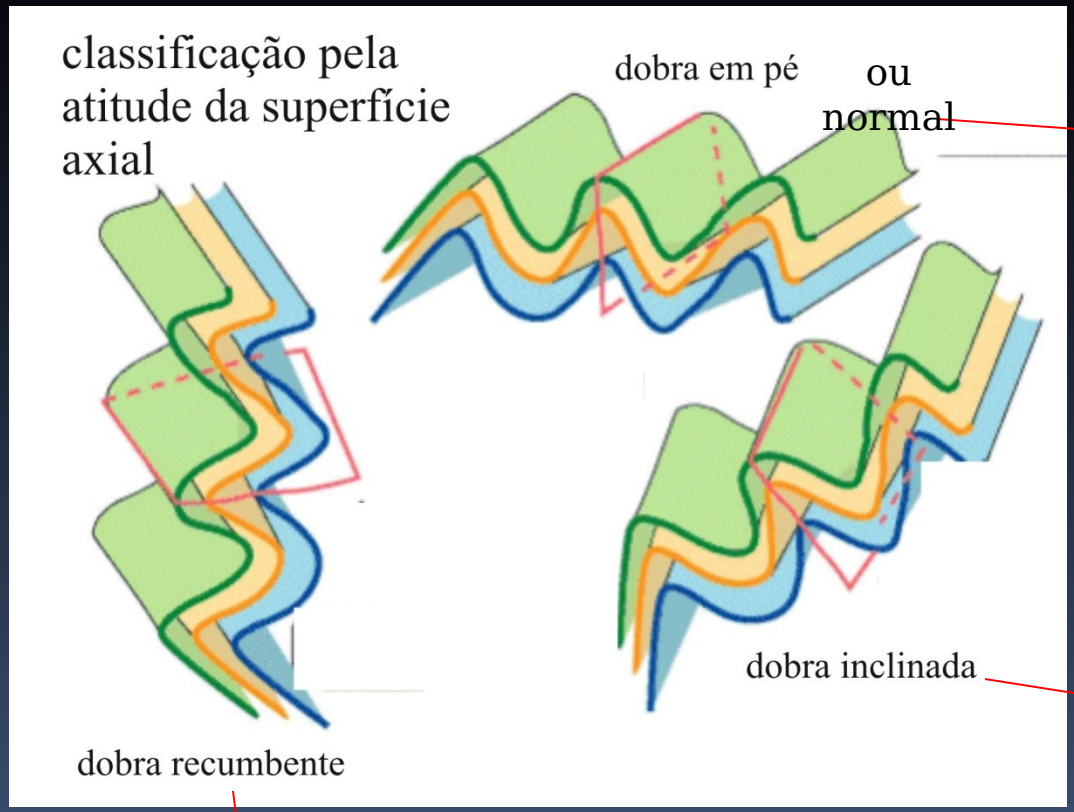


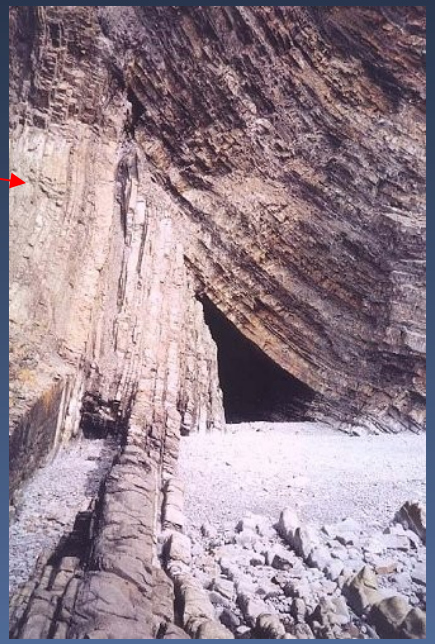
Fig. 11.7 *Classificação de dobras baseada na orientação da linha de charneira e da superfície axial*

Fonte: baseado em Fleuty (1964).

Segundo Fossen (2012).



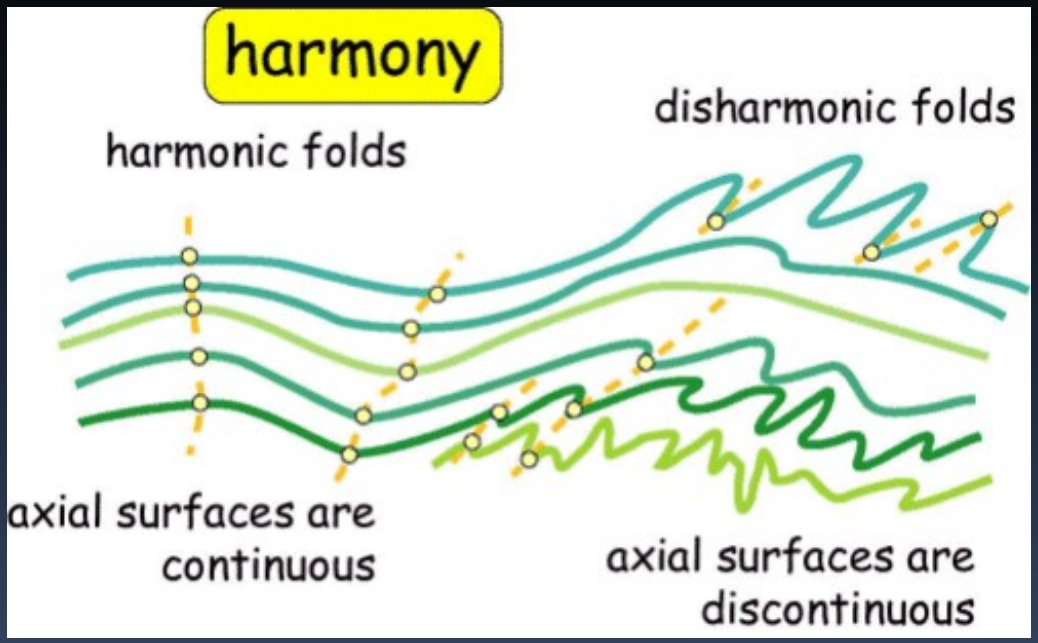
Dobras normais

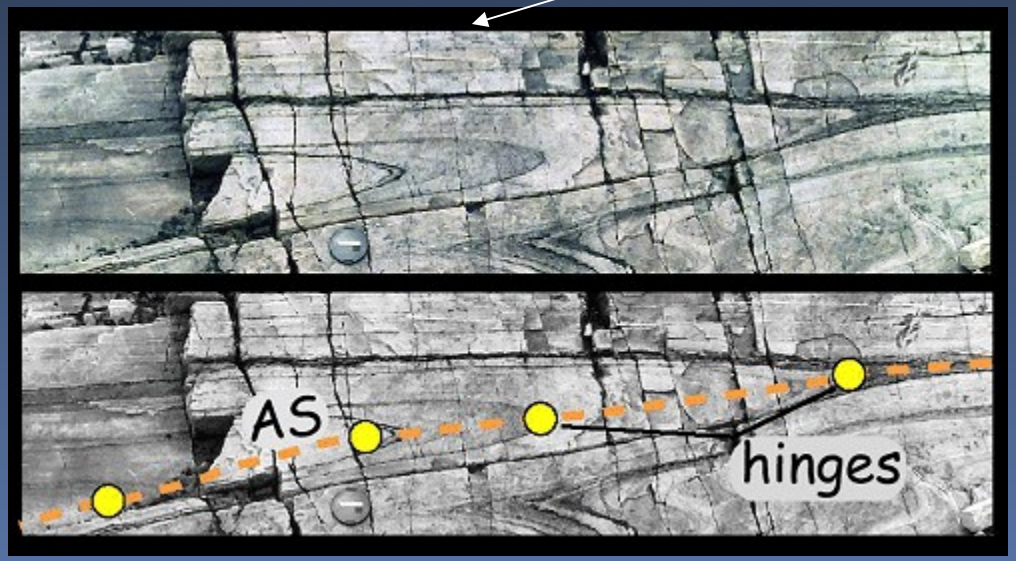


Dobras inclinadas

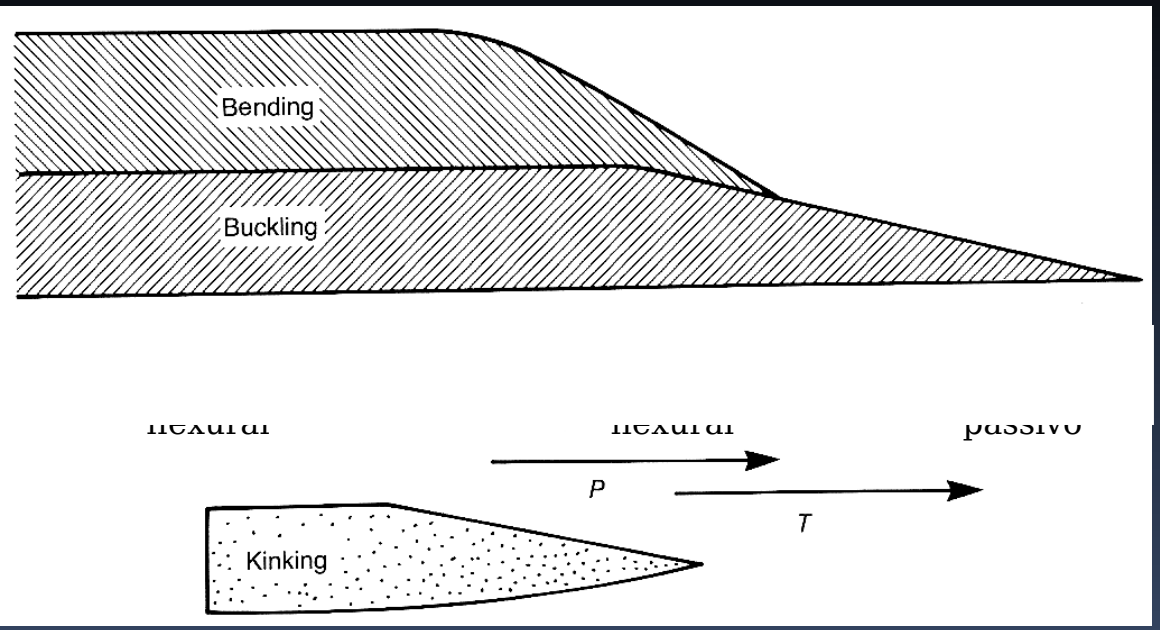
Dobras recumbentes

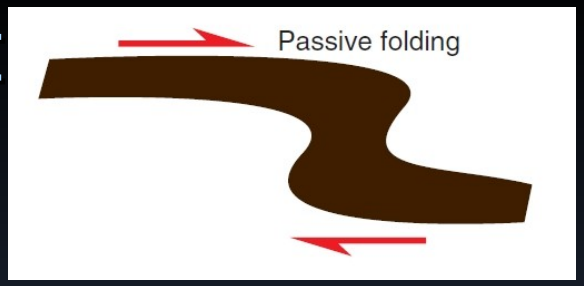
Classificação pela continuidade das superfícies axiais

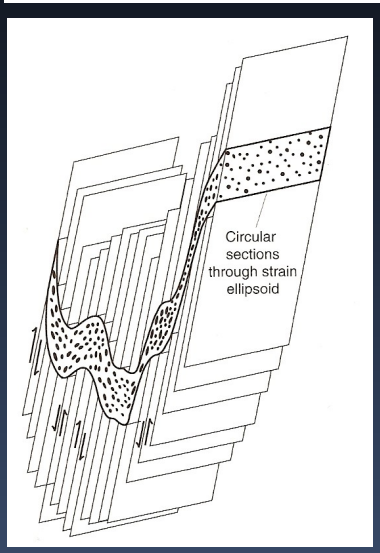




Mecanismos de dobrament

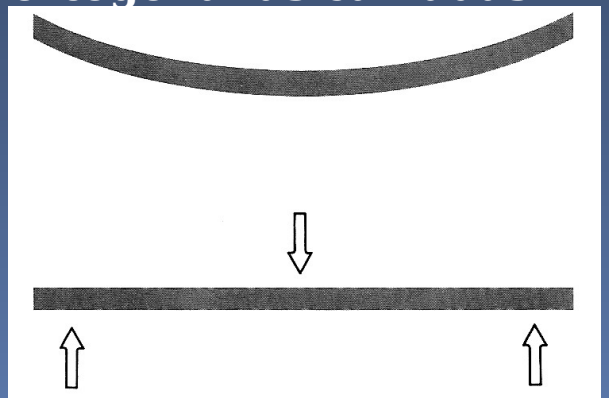




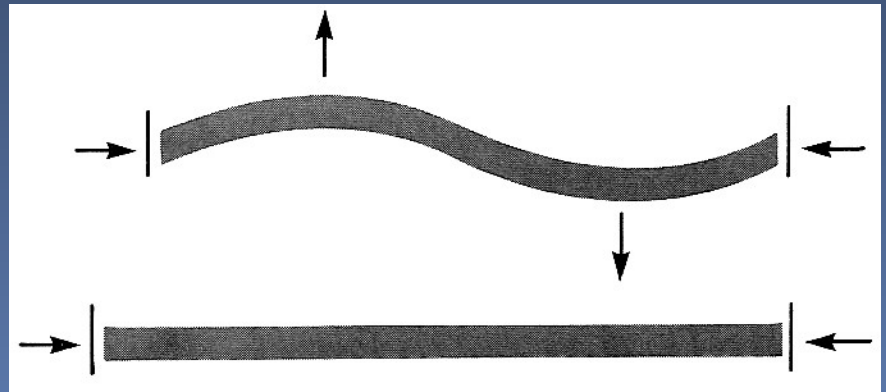


Dobras passivas são formadas por fluxo passivo →cisalham en- to paralelo às camadas (<> P ou T)

Bending **– arqueamento ou flexuramento (p.ex.dobras associadas a falhas) – tensão ortogonal as camadas**

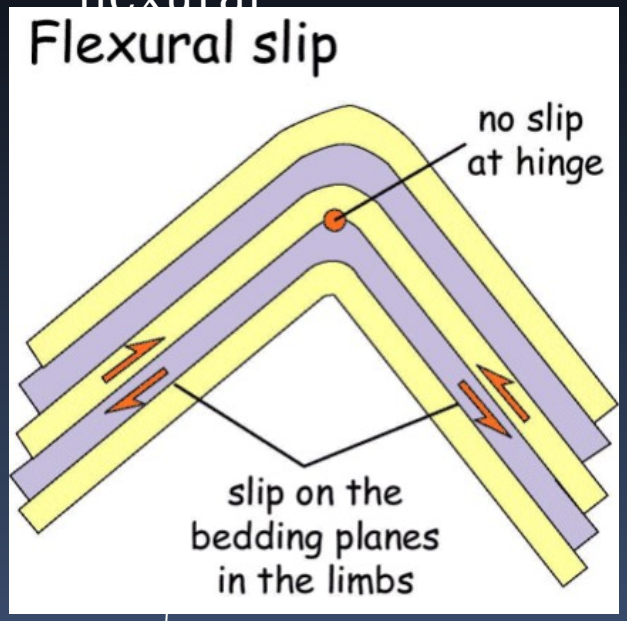


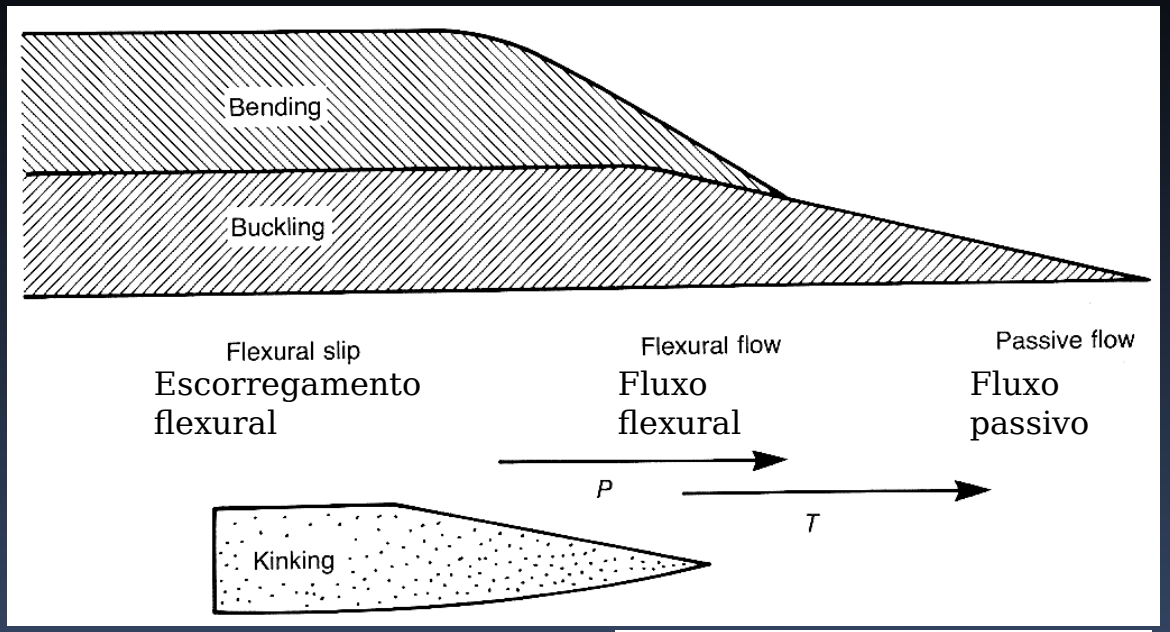
Buckling **– dobramento ativo ou flambagem encurtamento paralelo às camadas, p ou T) compressão paralela as camadas**

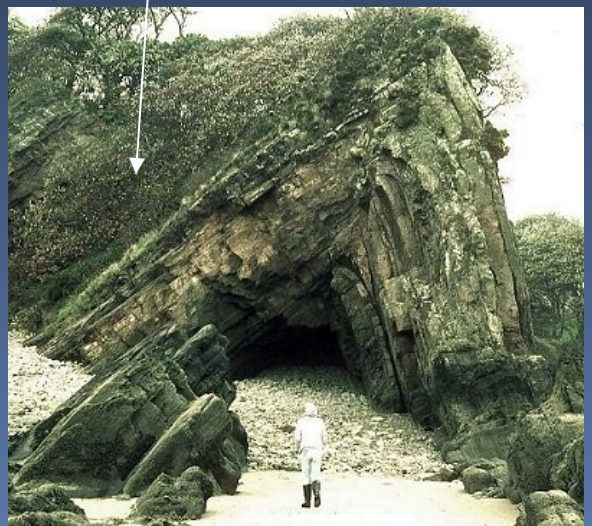


Deformação interna

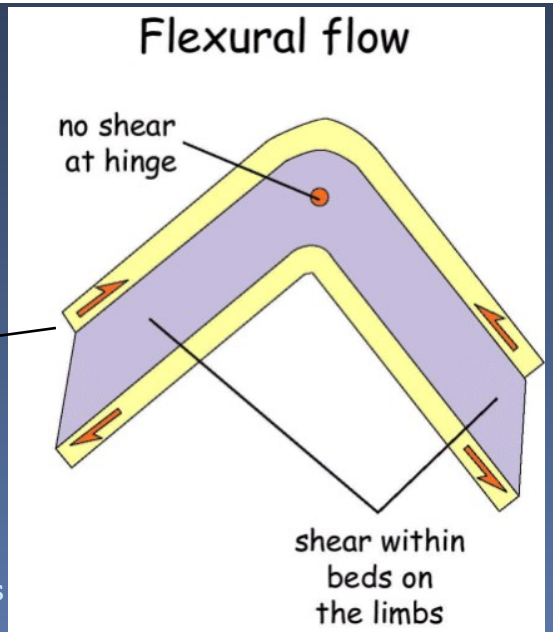
Escorregamento flexural





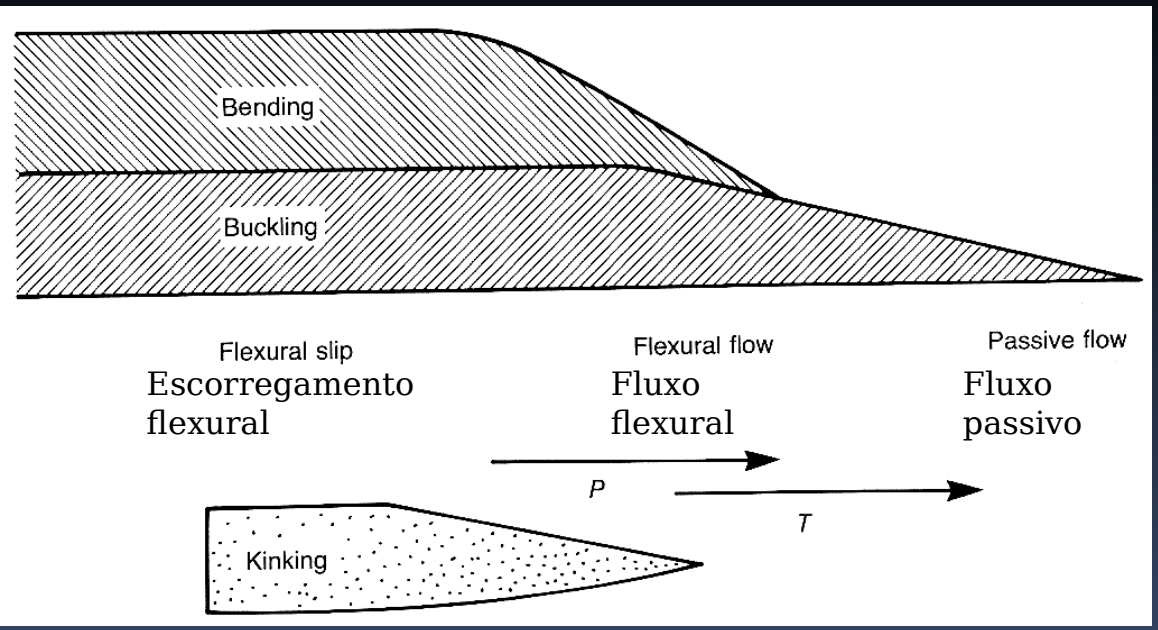


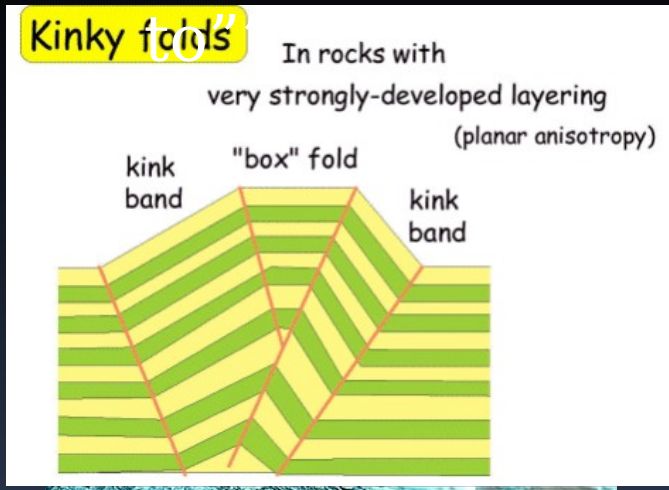
Fluxo flexural



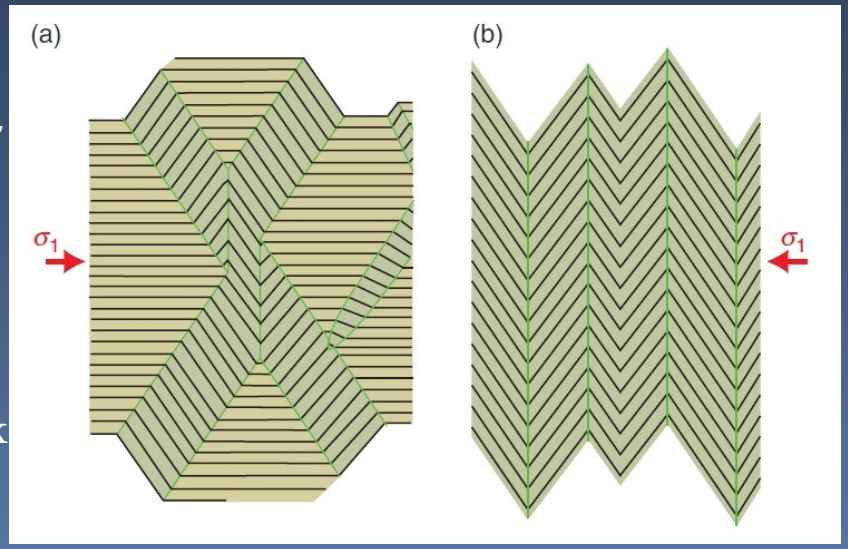
Mecanismos de dobramento

“retorcimen

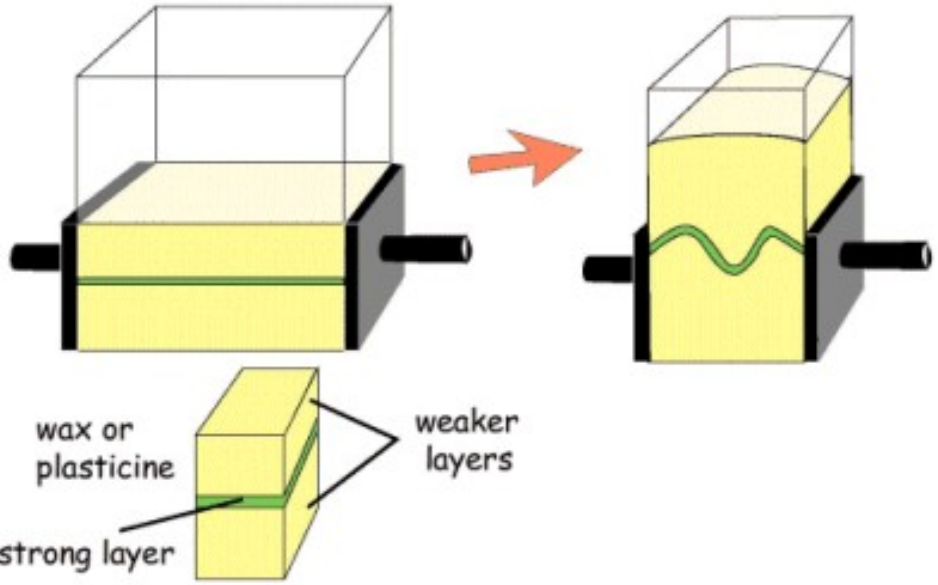


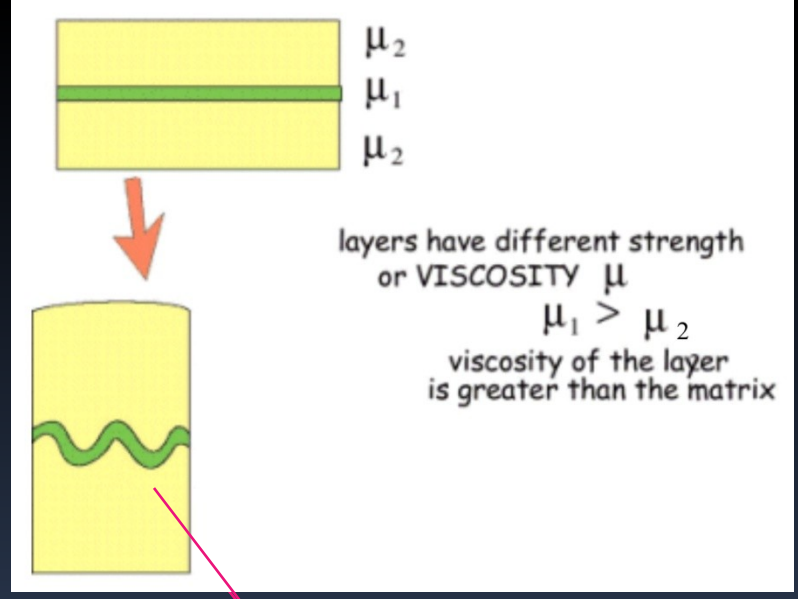


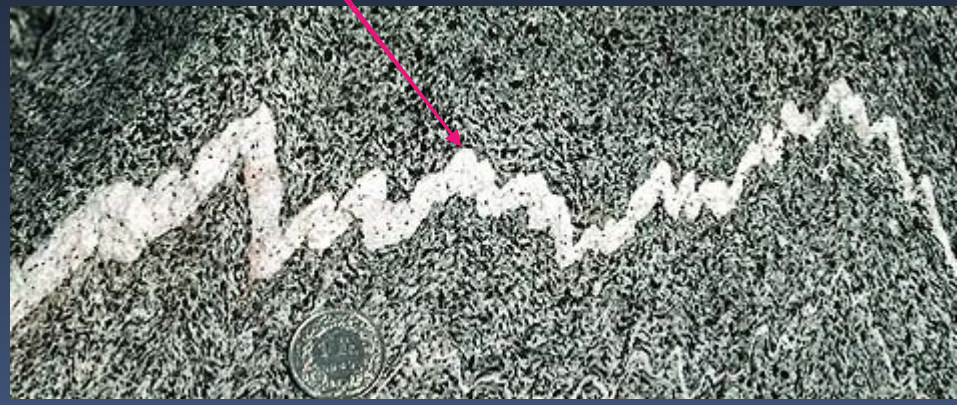
a) Eixo de tensão máxima, sigma 1, posicionado na bissetriz do ângulo obtuso entre as famílias de bandas de kink – deformação dúctil (Fossen, H, 2011).

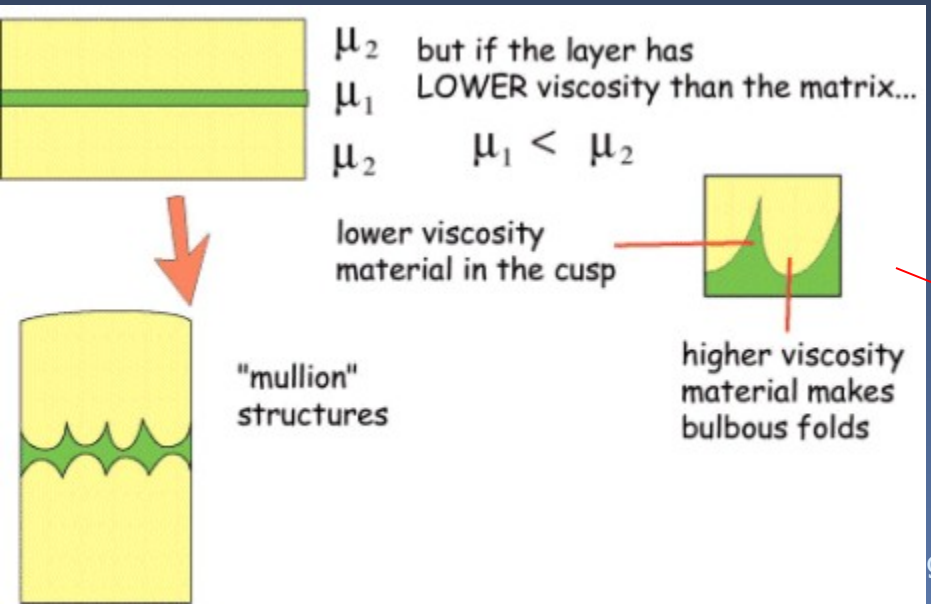


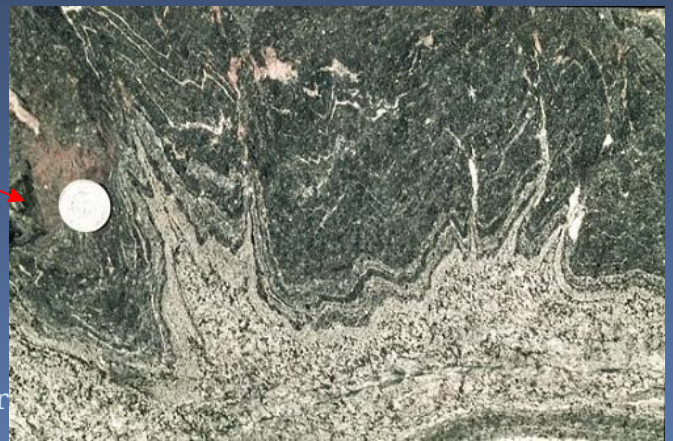
Making buckle folds

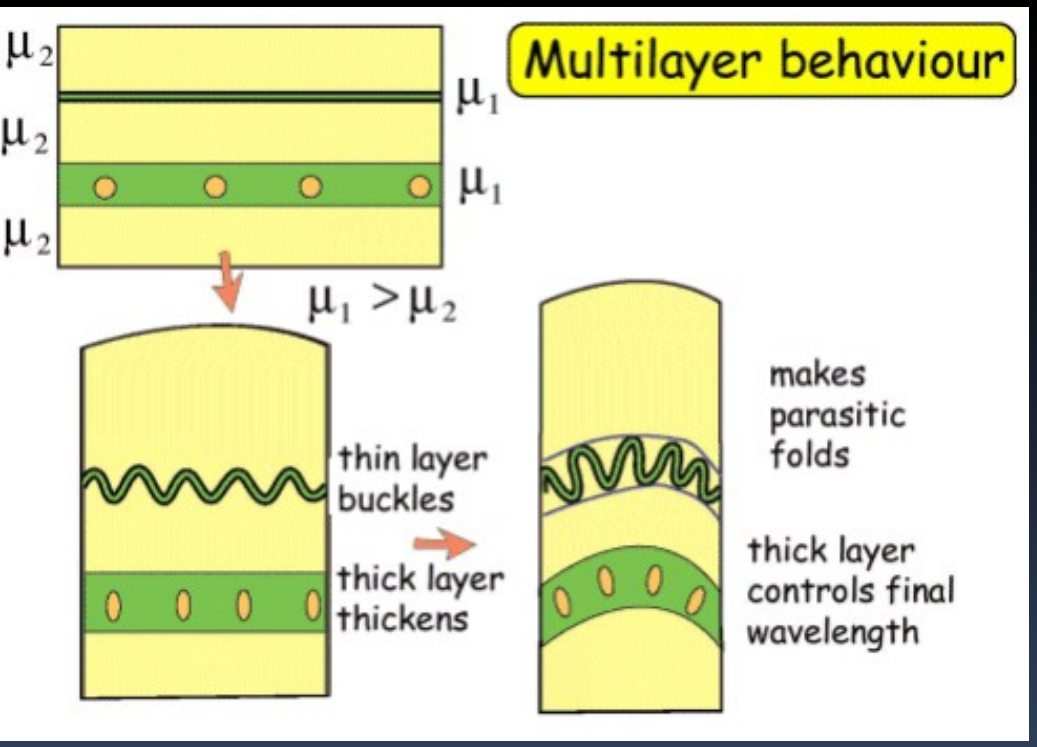




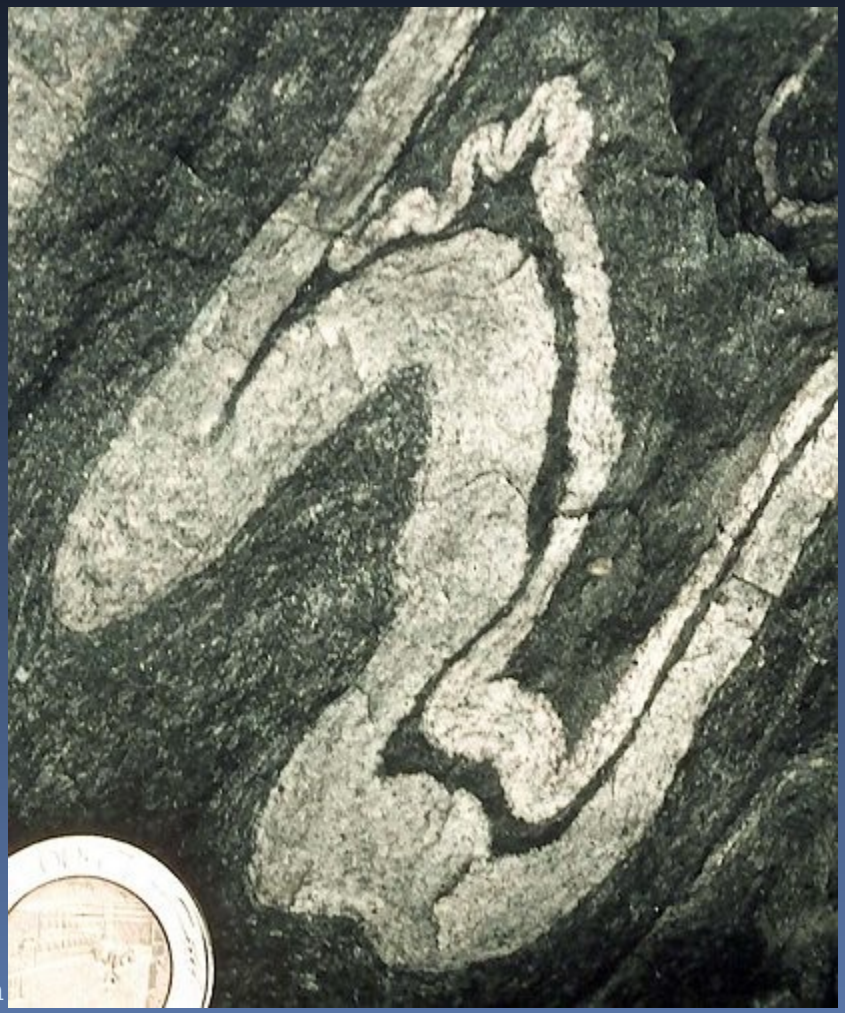


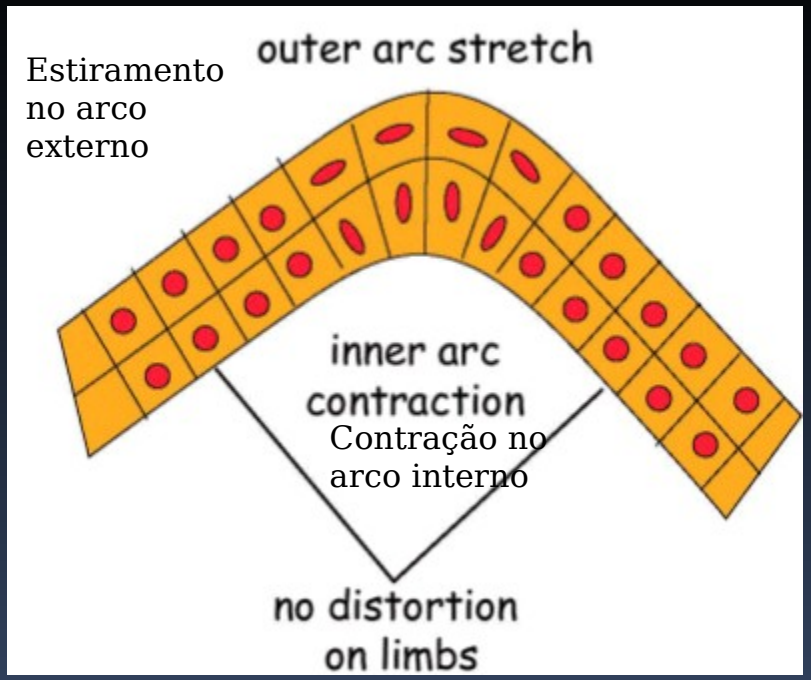


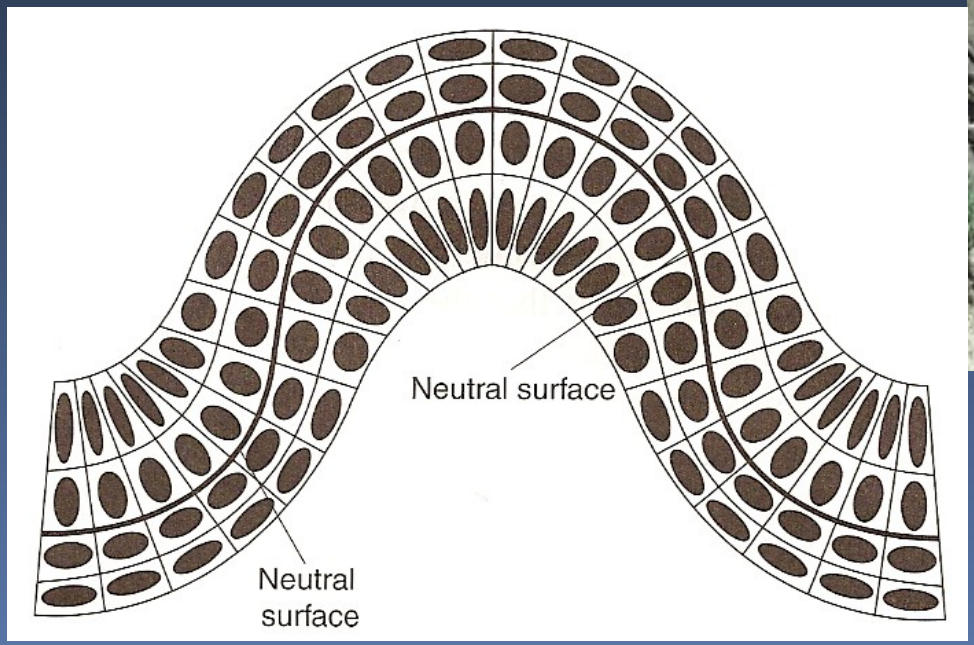




Duas camadas com mesma viscosidade e > que a do meio → a de maior espessura terá o > comprimento de onda.



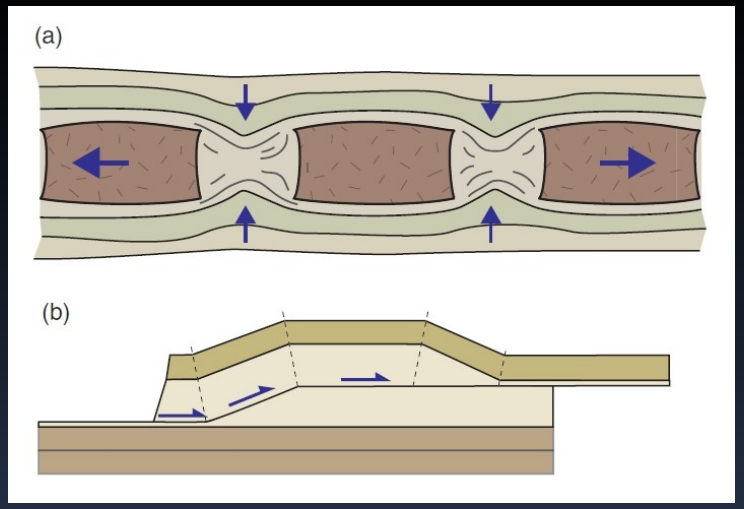

Estiramento no arco externo
outer arc stretch
inner arc contraction
Contração no arco interno
no distortion on limbs

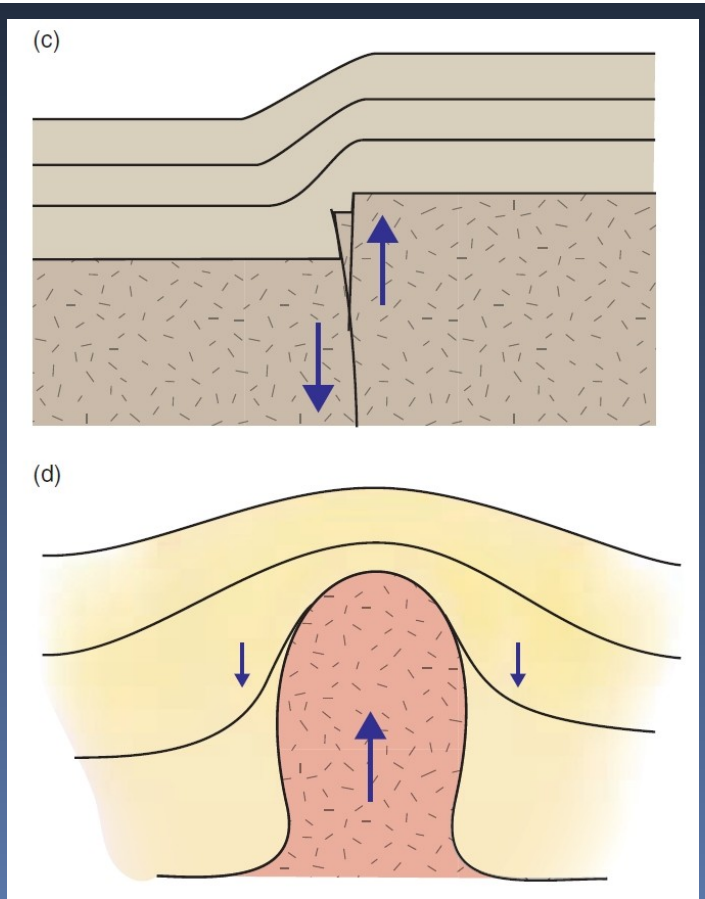

Neutral surface
Neutral surface

Dobras por flexuramento – forças atuam em alto ângulo com as camadas

a) Dobras entre boudins
b) Associadas a falhas de empurrão (vale também para falhas normais)
c) Sobre falhas reativadas do embasamento
d) Sobre intrusões rasas ou domos

(se





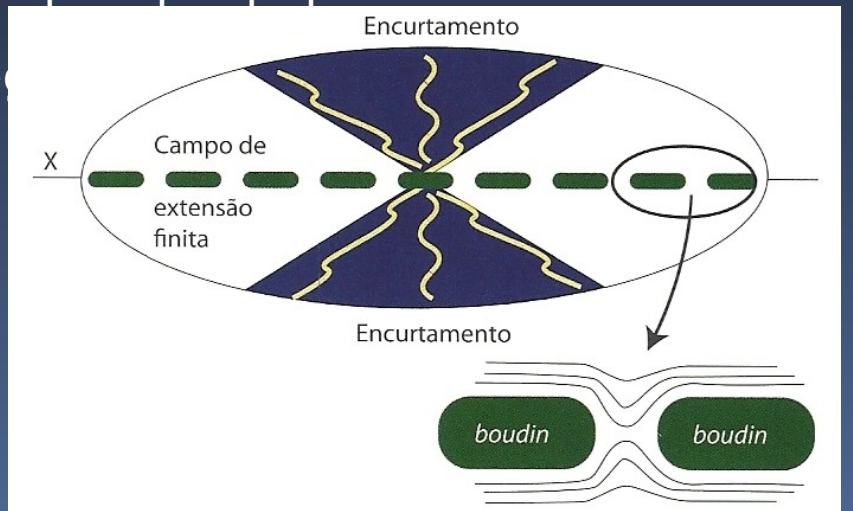
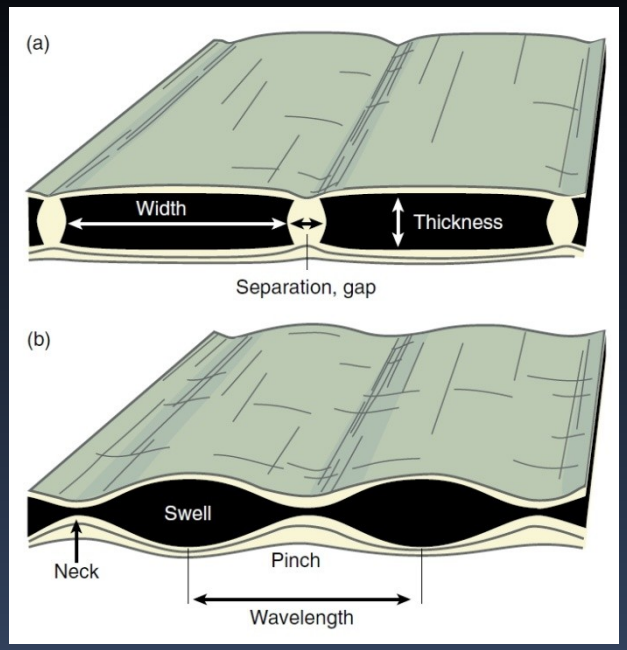
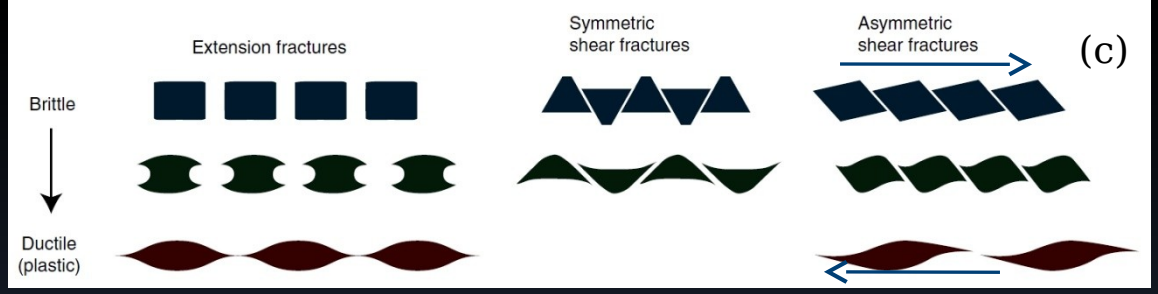


Fig. 11.14 *Vergência de dobra em relação ao elipsoide de deformação em deformação coaxial. Note que as dobras também podem ocorrer entre* boudins *no campo de extensão finita*

Boudins



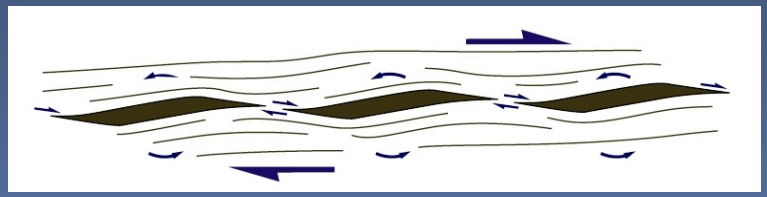


Em (c) contraste diminui de cima para baixo.

Em (d), *boudins* de Anfibolito em gnaisse Granítico formados po distensão em ambient dúctil.

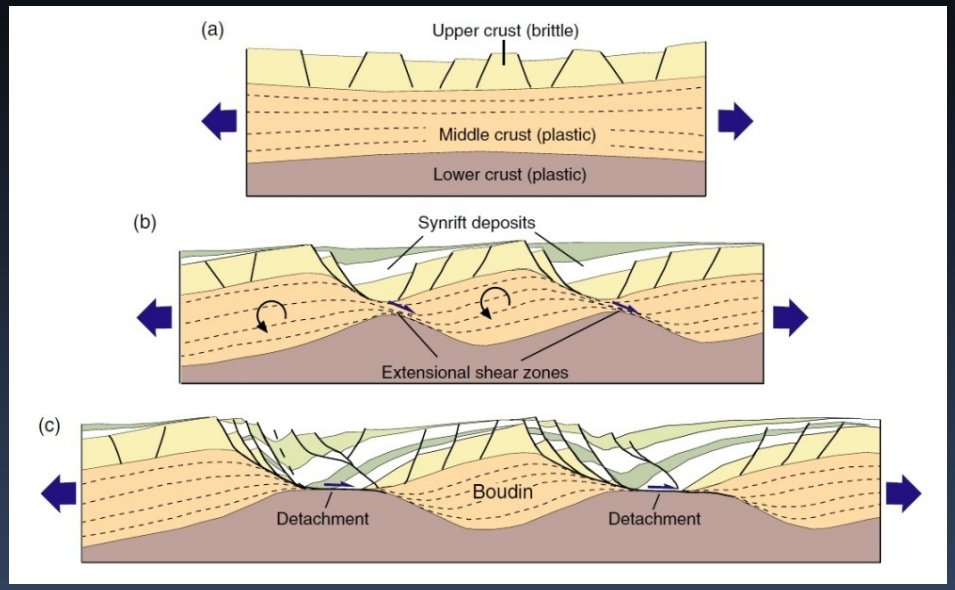
Em (a) contraste maior de viscosidade que em (b)

Cisalhamento assimétrico rúptil em gnaisse anfibolítico (e) e em veio granítico em biotita gnaisse (f).

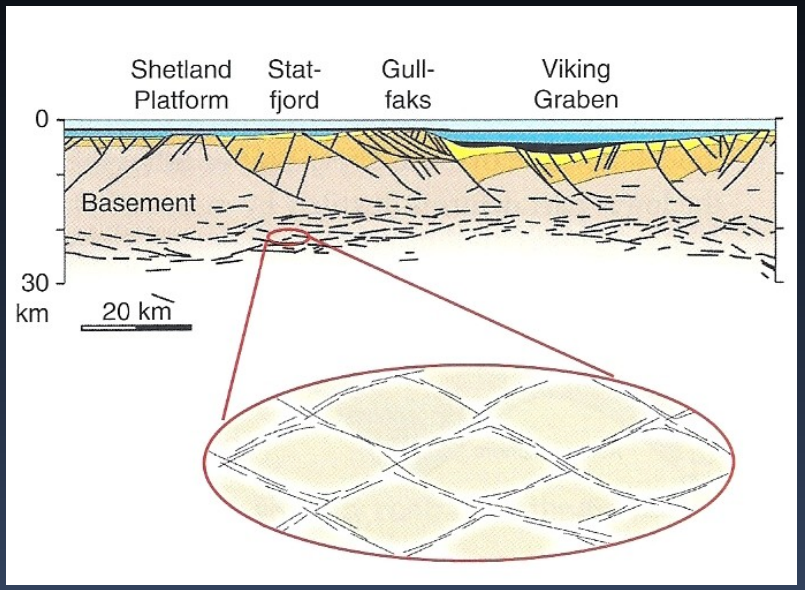


A boudinagem é controlada pelo contraste de viscosidade entre as camadas. A camada mais viscosa será boudinada. Segundo Fossen

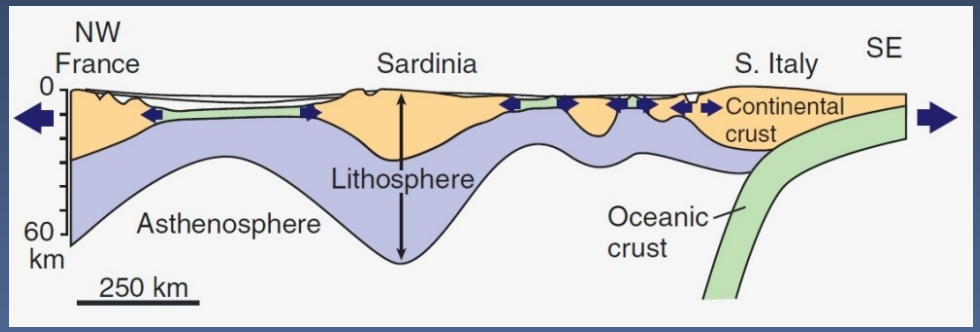
Boudins em escala litoférica



Boudinagem assimétrica na crosta continental mediana



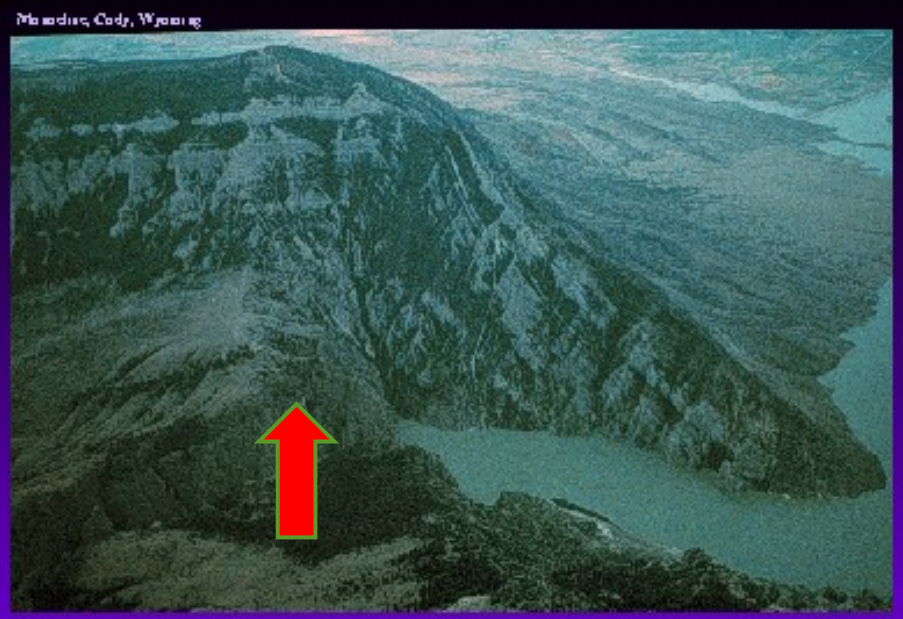
Boudins simétricos, em fraturas de cisalhamento, na base da crosta, interpretados em linhas sísmicas do mar do Norte.



Boudinagem simétrica da crosta continental no Mediterrâneo.

Segundo Fossen (2011).

monoclinais



Dobras de arrasto em deformação rúptil - dúctil